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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Adel S. Al-Misfer

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,736	Applicant(s) AL-MISFER, ADEL S.	
	Examiner Gail Verbitsky	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-27, 29-38 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-38 and 41-45 is/are allowed.
- 6) ☒ Claim(s) 24-27 and 29-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 24-25, 29, 30, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasselman (U.S. 4672842) in view of Evans (U.S. 3716417) and Gearing et al. (U.S. 3205709) [hereinafter Gearing].

Hasselman discloses a device in the field of applicant's endeavor comprising a thermal probe for use in detecting temperatures at different levels in a liquid material, the thermal probe comprising:
an elongated rod 31 having a proximal end and a distal end, the distal end making initial contact with the liquid material;
a plurality of temperature-sensing junctions (resistances) 32-34 positioned along the longitudinal length of the rod, wherein each of the plurality of temperature-sensing junctions generates an electrical signal corresponding to the temperature of the liquid material directly contacting the respective junction;
a plurality of electrical signal conveying members (electrical wires connecting the junctions) connected to the plurality of temperature-sensing junctions and extending to the proximal end of the rod for conducting the electrical signals and conductive means for conveying the electrical signals from the proximal end of the rod to a remote signal processor/ computer 24.

Hasselman does not explicitly teach a sheath completely surrounding the rod and including:
a plurality of apertures through an outer surface of the sheath and extending along the longitudinal length of the rod with which apertures the plurality of junctions are respectively positioned to be exposed to and to directly contact the liquid material.

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Hasselman is silent so as a terminal head connected to the proximal end of the elongated rod for manual manipulation of the thermal probe by a user, the terminal head includes an edge for removably positioning and resting the terminal head on an edge of an opening in a container retaining the liquid material. Hasselman does not teach a plurality apertures with the details, as claimed by applicant.

Evans teaches in Fig. Figs. 1, 3 a profile measuring device having a sheath with openings/ apertures, where thermocouple junctions are located and exposed to a fluid of interest. The device is connected to a connector/ terminal head 32 to be connected to an external meter or other circuitry.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Hasselman, so as to have a plurality of temperature measuring thermocouples instead of resistances, because both of them are alternate types of temperature measuring devices which will perform the same function of sensing the profile/ level of the fluid within a container, if one is replaced with another.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Hasselman, so as to have a plurality of apertures for temperature sensing junctions in order to provide a close thermal contact with the fluid and to allow the operator to know exactly at what level the temperature is being taken and whether it is above or below the threshold without averaging the temperature, thus, to achieve more accurate results of measuring.

Gearing teaches a device in the field of applicant's endeavor that has a head 36 and an edge 26 connected to a remotely located meter 22 and allowing the user to manually remove the device from a container 20.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclose by Hasselman, so as to have a head, as taught by gearing, in order to properly position the device onto a container with a fluid of interest, as already suggested by Gearing in Figs. 1, 3, a profile measuring device having a sheath with openings/ perforations, where thermocouple junctions are located and exposed to a fluid of interest.

For claim 29: the use of the particular material, i.e., stainless steel, as stated in claim 29, for the sheath, absent any criticality, is only considered to be the “optimum” material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the probe element disclosed by prior art since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

The method steps will be met during the normal operation of the device stated above.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasselman, Evans, Gearing as applied to claims 24-25, 29, 30, 32 above, and further in view of Poole (U.S. 6098457).

Hasselman, Evans, Gearing disclose the device as stated above.

They do not explicitly teach that the rod is made of an insulating material.

Poole discloses a device in the field of applicant's endeavor wherein a rod 18 is made of an insulating material where the sensor elements 20 are printed on.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Hasselman, Evans, Gearing,

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so as to make the rod of an insulating material, as very well known in the art, in order to protect the measuring resistances from damage.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasselman, Evans, Gearing as applied to claims 24-25, 29, 30, 32 above, and further in view of Mailliet (U.S. 5108192).

Hasselman, Evans, Gearing disclose the device as stated above.

They do not explicitly teach that the device is tapered.

Mailliet discloses a device in the field of applicant's endeavor wherein the distal end of the device is tapered.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Hasselman, Evans, Gearing, so as to tapered the distal end of the device because the particular shape of the device, absent any criticality, is only considered to be an obvious modification of the shape disclosed by Konno because the court has held that a change in shape or configuration, without criticality, is within the level of skill in the art as the particular shape claimed by applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide. In re Dailey, 149 USPQ 47 (CCPA 1976).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasselman, Evans and Gearing, as applied to claims 24-25, 29, 30, 32 above, and further in view of Brady (U.S. 3628867).

Hasselman, Evans, and Gearing disclose the device stated above.

They do not disclose each of the junctions can be a transistor.

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Brady teaches a probe monitoring a liquid temperature could be in the form of resistor/ thermistor/ RTD, thermocouple or transistor.

Therefore, it would have been obvious to substitute a resistance temperature detector ('RTD) or a transistor temperature detector for the thermocouple temperature sensor used in the probe of Hasselman, Evans and Gearing, as taught or suggested by Brady, since they are known equivalents of temperature sensing devices.

The method steps will be met during the normal operation of the device stated above.

Allowable Subject Matter

Claims 33-38, 41-45 are allowed.

Response to Arguments

Applicant's arguments with respect to claims 24-27, 29-32 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

JP 62261928 A discloses a plurality of temperature sensing devices 3(1) – 3(n) wherein when a liquid level in a tank/ container fluctuates, the sensor 3(1) is in a vapor phase and sensor 3(n) is in a liquid phase. JP teaches to compute mean/ average normalized temperature. There is a function between the liquid level and the mean/ average temperature. It is inherent that the temperature of a temperature sensor could be compared with the mean/ average temperature.

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Yuki et al. (U.S. 5385200) [hereinafter Yuki] discloses a device in the field of applicant's endeavor comprising obtaining a molten metal temperature by measuring thermocouple and comparing the temperature with a predetermined temperature.

Kempf et al. (U.S. 6059453) [hereinafter Kempf] discloses the device in the field of applicant's endeavor comprising a thermocouple or RTD probe rod for measuring a liquid temperature, the probe having a housing/ terminal head resting on its edge 22 on the container (mounting ring 16 welded to the container) with the liquid, as shown in Fig. 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571/ 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Gail Verbitsky
Primary Patent Examiner, TC 2800*

October 21, 2010

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/Gail Verbitsky/

Primary Examiner, Art Unit 2855